



### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product name	:	Benzoyl chloride
REACH No.	:	01-2119487138-29-XXXX
CAS-No.	:	98-88-4
Index-No.	:	CH-L8-B007

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

#### 1.3 Details of the supplier of the safety data sheet

Company	VALERIAN LABS HOLDING CORP
Address	1130-1971 BROADWAY STREETPORT COQUITLAM, BC V3C 0C9 CANADA
Telephone	+1 (604)-710-0869
E-mail:	<a href="mailto:info@valerianlabs.com">info@valerianlabs.com</a>

#### 1.4 Emergency telephone

**Number:** 1-888-226-8832 CANUTEC (CANADA)  
1-800-424-9300 CHEMTREC (USA)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### In accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 4), H312  
Skin corrosion (Sub-category 1B), H314  
Serious eye damage (Category 1), H318  
Skin sensitization (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.





## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

### 2.2 Label elements

#### Labelling In accordance with GHS Standards

Pictogram	
Signal Word	Danger
Hazard statement(s) H302 + H312 H314 H317 H331	Harmful if swallowed or in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Toxic if inhaled.
Precautionary statement(s) P261 P280	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard Statements	none

#### Reduced Labeling (<= 125 ml)

Pictogram	
Signal Word	Danger
Hazard statement(s) H317 H314 H331	May cause an allergic skin reaction. Causes severe skin burns and eye damage. Toxic if inhaled.
Precautionary statement(s) P261 P280	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard	none





## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

### Statements

#### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Lachrymator.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>7</sub>H<sub>5</sub>ClO  
Molecular weight : 140,57 g/mol  
CAS-No. : 98-88-4  
EC-No. : 202-710-8

Component	Classification	Concentration
<b>benzoyl chloride</b>		
CAS-No. 98-88-4 EC-No. 202-710-8	Acute Tox. 4; Acute Tox. 3; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; H302, H331, H312, H314, H318, H317	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.



**In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

Foam Water

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Hydrogen chloride gas

Container explosion may occur under fire conditions.

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.





### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. ). Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

For disposal see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

##### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

##### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

##### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store under inert gas. Moisture sensitive.

##### Storage class

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated





### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### Ingredients with workplace control parameters

#### 8.2 Exposure controls

##### Personal protective equipment

###### Eye/Face Protection:

- Select eye protection equipment that has been tested and approved in accordance with the relevant government standards, such as NIOSH (US) or EN 166 (EU). Utilize tightly fitting safety goggles.

###### Skin Protection:

- When handling, wear gloves that are inspected before use.
- Employ the correct glove removal technique (avoiding contact with the outer surface of the gloves) to prevent skin contact with this product. Dispose of contaminated gloves in accordance with applicable laws and good laboratory practices. Thoroughly wash and dry your hands.
- If this product is used in a solution, mixed with other substances, or under conditions that differ from EN 374, please contact the supplier of EC approved gloves.
- This recommendation serves as advisory guidance and should be evaluated by an industrial hygienist and safety officer who are familiar with the specific usage circumstances of our customers. It should not be interpreted as providing approval for any particular use scenario.

###### Body Protection:

- Wear acid-resistant protective clothing.

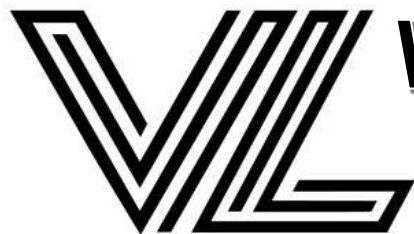
###### Respiratory Protection:

- In situations where the risk assessment indicates that air-purifying respirators are appropriate, utilize a full-face particle respirator type N100 (US) or type P3 (EN 143)
- respirator cartridges as a backup to engineering controls.
- If the respirator is the sole means of protection, use a full-face supplied air respirator. Employ respirators and components that have been tested and approved in accordance with the relevant government standards, such as NIOSH (US) or CEN (EU).

###### Control of Environmental Exposure:

- Prevent the product from entering drains.





## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Physical state                               | clear, liquid  |
| b) Color  | colorless  |
| c) Odor   | pungent  |
| d) Melting point/freezing point                 | Melting point/range: -1 °C   |
| e) Initial boiling point and boiling range      | 198 °C   |
| f) Flammability (solid, gas)                    | No data available  |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 27 %(V)<br>Lower explosion limit: 2,5 %(V)                |
| h) Flash point                                  | 72 °C - closed cup   |
| i) Autoignition temperature                     | 600 °C<br>at 1.013 hPaAuto-flammability  |
| j) Decomposition temperature                    | No data available  |
| k) pH   | 2 at 1 g/l(External MSDS)  |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                             | 2 g/l  |
| n) Partition coefficient: n-octanol/water       | No data available  |
| o) Vapor pressure                               | 1 hPa at 32 °C   |
| p) Density                                      | 1,211 g/mL at 25 °C  |
| Relative density                                | 1,21 at 20 °C  |
| q) Relative vapor density                       | 4,85 - (Air = 1.0)   |
| r) Particle characteristics                     | No data available  |
| s) Explosive properties                         | No data available  |
| t) Oxidizing properties                         | none   |

#### 9.2 Other safety information

- |                        |                    |
|------------------------|--------------------|
| Relative vapor density | 4,85 - (Air = 1.0) |
|------------------------|--------------------|





### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

#### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Water

Alkali metals

Alkaline earth metals

alkalines

Amines

sulfoxides

Alcohols

Strong oxidizing agents

Risk of ignition or formation of inflammable gases or vapours with:

Metals

Risk of explosion with:

dimethyl sulfoxide

aluminium chloride

sodium azide

#### 10.4 Conditions to avoid

Exposure to moisture.

Strong heating.

#### 10.5 Incompatible materials

various metals, Strong oxidizing agents

#### 10.6 Hazardous decomposition products

In the event of fire: see section 5

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

LD50 Oral - Rat - female - 1.900 mg/kg

(OECD Test Guideline 401)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute toxicity estimate Inhalation - 4 h - 5,1 mg/l - vapor

(Expert judgment)

Acute toxicity estimate Dermal - Expert judgment - 1.100,1 mg/kg

##### Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive - 24 h







## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

Remarks: (ECHA)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Serious eye damage/eye irritation**

Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: (IUCLID)

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information****Endocrine disrupting properties****Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.





### SECTION 12: Ecological information

#### 12.1 Toxicity

Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - 34,7 mg/l - 96 h  
(OPPTS 850.1075)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 85 - 110 mg/l - 72 h  
(OECD Test Guideline 201)

static test EC10 - Pseudokirchneriella subcapitata (green algae) - 37 - 47 mg/l - 72 h  
(OECD Test Guideline 201)

#### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 20 d  
Result: 95 % - Readily biodegradable.  
(OECD Test Guideline 301D)

#### 12.3 Bio accumulative potential

No data available

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

#### 12.6 Endocrine disrupting properties

##### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 12.7 Other adverse effects

No data available

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.





### SECTION 14: Transport information

#### 14.1 UN number

ADR/RID: 1736

IMDG: 1736

IATA: 1736

#### 14.2 UN proper shipping name

ADR/RID: BENZOYL CHLORIDE

IMDG: BENZOYL CHLORIDE

IATA: Benzoyl chloride

#### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

#### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

#### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

#### 14.6 Special precautions for user

Tunnel restriction code : (E)

Further information : No data available

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

##### National legislation

Seveso III: Directive 2012/18/EU of the H2 ACUTE TOXIC  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

##### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

### SECTION 16: Other information

#### Full text of other abbreviations

These are abbreviations and acronyms commonly used in the field of chemical safety, regulation, and transportation:

1. ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
2. ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
3. AIIC - Australian Inventory of Industrial Chemicals
4. ASTM - American Society for the Testing of Materials
5. bw - Body weight
6. CMR - Carcinogen, Mutagen, or Reproductive Toxicant

Valerian Labs Inc.

1(604)-710-0869

www.valerianlabs.com

1130-1971 Broadway Street

Port Coquitlam, BC, Canada, V3C 0C9





## Safety Data Sheet

Version: 1.2

Revision date: SEPT-01-2023

Retrieve on: SEPT-10-2023

7. DIN - Standard of the German Institute for Standardization
8. DSL - Domestic Substances List (Canada)
9. ECx - Concentration associated with x% response
10. ELx - Loading rate associated with x% response
11. EmS - Emergency Schedule
12. ENCS - Existing and New Chemical Substances (Japan)
13. ErCx - Concentration associated with x% growth rate response
14. GHS - Globally Harmonized System
15. GLP - Good Laboratory Practice
16. IARC - International Agency for Research on Cancer
17. IATA - International Air Transport Association
18. IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
19. IC50 - Half maximal inhibitory concentration
20. ICAO - International Civil Aviation Organization
21. IECSC - Inventory of Existing Chemical Substances in China
22. IMDG - International Maritime Dangerous Goods
23. IMO - International Maritime Organization
24. ISHL - Industrial Safety and Health Law (Japan)
25. ISO - International Organization for Standardization
26. KECI - Korea Existing Chemicals Inventory
27. LC50 - Lethal Concentration to 50% of a test population
28. LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
29. MARPOL - International Convention for the Prevention of Pollution from Ships
30. n.o.s. - Not Otherwise Specified
31. NO(A)EC - No Observed (Adverse) Effect Concentration
32. NO(A)EL - No Observed (Adverse) Effect Level
33. NOELR - No Observable Effect Loading Rate
34. NZIoC - New Zealand Inventory of Chemicals
35. OECD - Organization for Economic Co-operation and Development
36. OPPTS - Office of Chemical Safety and Pollution Prevention
37. PBT - Persistent, Bio accumulative, and Toxic substance
38. PICCS - Philippines Inventory of Chemicals and Chemical Substances
39. (Q)SAR - (Quantitative) Structure Activity Relationship
40. REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals
41. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
42. SADT - Self-Accelerating Decomposition Temperature
43. SDS - Safety Data Sheet
44. TCSI - Taiwan Chemical Substance Inventory
45. TECI - Thailand Existing Chemicals Inventory
46. TSCA - Toxic Substances Control Act (United States)
47. UN - United Nations
48. UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods
49. vPvB - Very Persistent and Very Bio accumulative

### Additional information

The provided information is considered accurate but is not intended to cover every aspect and should be regarded as a general reference. The content in this document is derived from our current understanding and is relevant to the product concerning the necessary safety measures.

